UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/741,790	12/19/2003	Christopher C. Fraser	MPI00-535OMNICN1M	6648

30405 7590 09/11/2007

MILLENNIUM PHARMACEUTICALS, INC.
40 Landsdowne Street
CAMBRIDGE, MA 02139

EXAMINER	
JIANG, DONG	
ART UNIT	**PAPER NUMBER**
1646	

MAIL DATE	DELIVERY MODE
09/11/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/741,790	FRASER ET AL.	
	Examiner	Art Unit	
	Dong Jiang	1646	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 June 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *86-92 and 95-101* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *86-92 and 95-101* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED OFFICE ACTION

Applicant's amendment filed on 14 June 2007 is acknowledged and entered. Following the amendment, claims 93, 94, 102 and 103 are canceled, and claim 86 is amended.

Currently, claims 86-92 and 95-101 are pending and under consideration.

Declaration

The deposit declaration filed on 14 June 2007 is sufficient to overcome the rejection of claims 86-92 and 95-101 under 35 U.S.C. 112, first paragraph.

Withdrawal of Objections and Rejections:

The rejections of claims 86-92 and 95-101 under 35 U.S.C. 112, first paragraph are withdrawn in view of applicant's deposit declaration and amendment.

Rejections under 35 U.S.C. §112:

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 89, 90, 98 and 99 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 89 is indefinite for the recitation "antibody binds to amino acid residues 15-423 of SEQ ID NO:417" because it is unclear whether it is meant that the antibody binds to all of the residues 15-423 of SEQ ID NO:417, or binds to a region or some residues within the range of the residues 15-423 of SEQ ID NO:417. The recitation, as written, reads on that the antibody would bind to all residues, however, such is not known in the art, as an antibody usually binds to an epitope or a small region of a protein. Claims 90, 98 and 99 are similarly indefinite.

Rejections Over Prior Art:

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 C.F.R. 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 86, 87, 89, 90, 95, 96, 98 and 99 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakagawa et al. (J. Lipid Res., 1995, 36:2212-2218), and in view of Campbell, A. (Laboratory Techniques in Biochemistry And Molecular Biology, Volume 13, Chapter 1, pages 1-33, 1984).

Nakagawa discloses a rat lysosomal acid lipase, which amino acid sequence (Figure 2) is about 54% identical to the present SEQ ID NO:417, and comprises amino acids 113-135 (23 residues) of the present SEQ ID NO:417 with 100% sequence identity (see appended computer printout of sequence search results).

Nakagawa does not teach antibodies to the lipase.

Campbell teaches that it is "customary now for any group working on a macromolecule to both clone the genes coding for it and make monoclonal antibodies to it (sometimes without a clear objective for their application)", that the potential of monoclonal antibodies in the basic research is considerable, and that in principle they can resolve a single protein from a complex mixture or indeed a single epitope responsible for a specific function of a complex macromolecule (page 29, section "Basic research" in particular).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to make the antibodies specific to Nakagawa's lipase because it is conventional in the art to generate antibodies following the cloning of a gene, as indicated by Campbell. Further, the Board of Patent Appeals and interferences has taken the position that once an antigen has been isolated, the manufacture of monoclonal antibodies against it is *prima facie* obvious. See Ex parte Erlich, 3 USPQ 2d 1011 (PTO Bd. Pat. APP. & Int. 1987), Ex parte Sugimoto, 14 USPQ 2d 1312 (PTO Bd. Pat. APp. & Int. 1990). The person of ordinary skill in the art would have been motivated to make the antibodies for further studying the protein since it is known as a lipase, and reasonably would have expected success because the technique of making antibodies to a specific protein is well established and routinely used in the fields. Note, the antibodies to Nakagawa's lipase would specifically bind to the polypeptide of the instant invention because they share the same sequence/epitopes (23 amino acids).

Claims 88 and 97 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakagawa et al. (J. Lipid Res., 1995, 36:2212-2218), and in view of Campbell, A. (Laboratory Techniques in Biochemistry And Molecular Biology, Volume 13, Chapter 1, pages 1-33, 1984), as applied to claims 86, 87, 89, 90, 95, 96, 98 and 99 above, and further in view of Sandhu (Critical Reviews in Biotech., 1992, 12(5/6): 437-462, especially pages 449-450).

The teachings of Nakagawa and Campbell are reviewed above. Neither reference teaches an antibody fragment to the protein.

Sandhu teaches Fab fragments of an antibody (page 449, sections D.), and indicates that whole antibody molecules and their constituent fragments such as Fab and $F(ab')_2$ are in widespread use as clinical and research reagents, and that in the past decade, the overwhelming majority of antibody fragments for research have been produced by biochemical methods (page 449, the first six lines of the left column).

It would have been obvious to the person of ordinary skill in the art at the time the invention was made to modify the antibody to Nakagawa's lipase to make antibody fragments such as Fab, following the teachings of Sandhu because antibody fragments are in widespread use as research reagents. The person of ordinary skill in the art would have been motivated to do so for further research of the lipase; and reasonably would have expected success because

Sandhu teaches how to make antibody fragments, and such techniques were well established in the art, and widely used in the field.

Claims 91, 92, 100 and 101 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakagawa et al. (J. Lipid Res., 1995, 36:2212-2218), and in view of Campbell, A. (Laboratory Techniques in Biochemistry And Molecular Biology, Volume 13, Chapter 1, pages 1-33, 1984), as applied to claims 86, 87, 89, 90, 95, 96, 98 and 99 above, and further in view of Hermanus et al., US 3,654,090.

The teachings of Nakagawa and Campbell are reviewed above. Neither reference teaches a labeled antibody to the protein.

Hermanus teaches a method of making enzyme-labeled antibodies or antigens for the determination of antibodies or antigens. Additionally, the reference teaches that enzymes can be detected in very small amounts; the method avoids the use of radio-isotope techniques, does not requires a radio-isotope equipment, and can be performed in every laboratory; and measuring enzyme activity is usually less time-consuming than counting radio activity (the paragraph bridging columns 1 and 2).

It would have been obvious to the person of ordinary skill in the art at the time the invention was made to make an enzyme-labeled antibody to Nakagawa's lipase using the method taught by Hermanus because such an antibody can be used for the detection of the protein. The person of ordinary skill in the art would have been motivated to do so for detecting the protein for further research because of the advantages suggested by Hermanus, and reasonably would have expected success because Hermanus has demonstrated that such enzyme-labeled antibody can be used for detection of the specific antigen (Example 5).

Conclusion:

No claim is allowed.

Advisory Information:

Any inquiry concerning this communication should be directed to Dong Jiang whose telephone number is 571-272-0872. The examiner can normally be reached on Monday - Friday from 9:30 AM to 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Nickol, can be reached on 571-272-0835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Dong Jiang

Dong Jiang, Ph.D.
Patent Examiner
AU1646
8/20/07